

Vol. III, No. 1

January, 1928



# INDIAN JOURNAL OF PSYCHOLOGY



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SENATE HOUSE, CALCUTTA

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# INDIAN JOURNAL OF PSYCHOLOGY

## Psychology and Education<sup>1</sup>

MICHAEL WEST.

I thank you for the honour which you have done me in electing me your president; but I confess that I feel acutely conscious of the difficulty of the task which you have imposed upon me,—namely, to deliver an address in succession to such varied masters of the subject as Dr. Sen Gupta, Mr. Haridas Bhattacharya, and Lt. Col. Berkeley Hill. I came to this Congress rather as a schoolmaster than as a psychologist; I came to learn from you rather than to address you, to gather ideas which may be put into practice.

I have thought this, therefore, a fitting occasion on which to discuss with you the relationship of our respective sciences, the relation of psychology and education.

Let us review the matter first rather from the point of view of the psychologist.

The earliest educational psychologists were also, for the most part philosophers, or theologians. They had, as a result of a study of human nature and its needs, evolved some theory as to what man is and what he ought to be; and, as true experimental psychologists, they went to the school to realize or to try out their ideal. So Aristotle goes to the school to realize his ideal of the perfect citizen, Quintilian to realize

<sup>1</sup> Presidential Address to the Psychology Section of the Indian Science Congress, 1926.

the perfect orator, the Monastic orders to realize the perfect ascetic, Chivalry to mould its 'very perfect knight,' the Jesuits to shape the disciplined missionary, Comenius to build his 'Pansophic' society ; so also Arnold to make his 'Rugby boy,' and Spencer to create his Scientist-citizen.

All these, inspite of their wide range of dates, have one characteristic in common : they all desire to mould the child to some definite type. They emphasize education as the production of conformity. They are potters, and children are their clay.

Now we find a second school of educational theory which puts forward a quite different point of view. This school may be typified by Erasmus, Vittorino da Feltre, Ratke, Pestalozzi, Froebel. It tends to emphasize the nature of the material rather than the form to which it is to be shaped. Education is not a moulding, according to them, but a growth ; and the psychologist is invited to co-operate with the educationist by describing the laws, or types, or main stages of mental growth in the child, in order that the school-master may design his education according to nature. They are the Gardeners, and children are their seedlings.

From natural education it is not a very long step to individual education. The pioneers of the Child Study movement, Preyer, Sully, Stanley Hall and others, accumulated a vast treasury of observation, replies to questionnaires, children's diaries, and so on, illustrating the nature and growth of the child. It will be noticed that the books of these writers are all of considerable size. But, when one proceeds to condense them, or 'boil them down,' in order to get a skeleton of principles on which to build a system of education—they disintegrate. The various observations have this in common that at the age of adolescence certain physical changes take place which are accompanied (as one would expect) by certain mental changes—but these mental changes vary enormously from one child to another. And we learn that in all other respects children are

different, very different, distressingly different. They refuse to 'boil down.'

The obvious deduction to be drawn from this is that natural education is individual education. Since children are so individual, they should be allowed to grow up as individuals. Education, then, should be a realization of individuality.

We have thus reached the precise antithesis of the first ideal of education. The school of educational thought which we first described, emphasized conformity to some type; this second school of thought emphasizes the realization of individuality.

\*     \*     \*     \*     \*

Let us now change our point of view and consider the matter from the aspect of the school-master.

Doubtless both of these theories are in their way true. It is true that a child must become adapted to the world in which he will have to live. And, since it takes all sorts of people to make a world, it is true also that he should develop to the full his own individual tendencies and capacities. So it becomes the function of the school-master to fulfil both these purposes. His duty may be very simply expressed: he is required to take infinitely variable human material, combine it into a class, and adapt it individually to an infinitely varied world.

The school-master applied to the Psychologist for guidance as to how best he might fulfil this task—of teaching all the subjects in the world. The advice of the psychologist was that schooling should be rather a development of powers than a teaching of specific subjects: it is obviously not possible to teach all subjects, but it is possible so to develop the powers, or faculties, of every boy that he may be capable of dealing with any subjects which may eventually arise in his individual life.

It is difficult to realize how vast and how malign has been the influence upon educational practice of this doctrine of Transference of Training and Development of Faculties. The theory has become so deeply rooted that even now, when it is universally acknowledged to be unsound, yet it is hardly possible to take up any general writing on the subject of education, or to listen to any popular speech on the subject of education, without encountering it. And it is quite impossible to justify most of our actual present practice in the schools without relying on it.

It was assumed that the results of a general training applied to certain mental faculties (themselves merely verbal abstractions of the psychologist) would be transferred to each specific mental activity included in those faculties. Thus Memory training might be supplied by a course of Latin. So Reasoning also might be developed by a course of Euclidean Geometry; and in the same way every subject in the curriculum could be justified on psychological grounds by its effect upon some faculty or other.

No other possible reason save this can be found for teaching Sanscrit to Bengali schoolboys in the manner in which it is taught to-day; for the course and the method of teaching are so ingeniously designed that it is almost impossible for any boy, in the time allowed for the course, to achieve any single usable function in the language. No other possible reason or excuse can be urged for the teaching of Geometry as it is taught to-day, unless it be some supposed training of the faculties: the boys learn the most abstruse Euclidean reasoning and leave school unable to measure the area of their own fields. Our present curriculum is cankered through and through with this vicious theory. The popular mind is touched with the same infection; and the school-master clings to his Faculties as pertinaciously as a drowning sailor to his raft.

For years he has taught in his school what he himself happened to know,—that is what he himself had been taught;

and has justified it as 'developing the faculties.' As a natural result of his hereditary method of framing it, the curriculum now dates back to the middle ages (when first this idea of Faculties was given to him). But this mediaeval curriculum is not considered obsolete,—for it develops the 'faculties' for dealing with the modern world.

James showed that the effect of such transference of the effect of learning was negligible : but no one took any real notice. Dr. Sleight, both by his own experiments and by his brilliant summary of the whole subject, has laid bare the barrenness of the theory beyond all disputation : but there has been no striking or immediate change in educational practice as a result. All that there has been is some feverish attempt to find new reasons for teaching the old things in the old way.

The fact is that the school-master dares not admit that the Faculty theory is invalid. Such an admission would plunge the world back for him into its 'buzzing confusion.' He would have to teach things for themselves, useful things, things of to-day. He would have to combine infinitely variable human material into a class and adapt it to an infinitely varied world. It was to find a way of escape from this very problem that he went to the psychologist. The psychologist has deserted him, but he cannot afford to admit the desertion.

\* \* \* \* \*

As regards the problem of the variety of his pupils, the school-master has for the most part been content to do his best. He has aimed at producing the type, the Public School type, or the some-other-sort-of school type. And, when certain pupils have proved intractable, he has been content to answer that the child did not suit the school, rather than that the school had failed to adapt itself to the child.

Of late however there has been a protest against this simple and practical solution of the problem, a recrudescence

of the theory of 'guided individual growth' and of the demand for individual attention.

This theory of Individual Attention is not, as we have already shown, in any sense a new one. It was propounded by Vittorino da Feltre, by Ratke, Erasmus, Locke, as well as by Froebel and Pestalozzi. Vittorino was a court tutor with a few lordlings as his pupils. Locke also was a 'private tutor.' Ratke, given a school of five hundred children, made a sorry mess of it. And as for Froebel and Pestalozzi, infant classes are always smaller than the others, and the infant teacher teaches only one class instead of one subject throughout the school.

(You will have noticed on school prospectuses, that when the school is small and struggling it advertises 'individual attention'; but, when it gets bigger, that is changed into a swimming bath or a gymnasium.)

\* \* \* \* \*

Such then is the present situation. The school-master solved the problem of unlimited variety in the curriculum by means of the doctrine of Faculties.—But this prop has now been taken away.

The school-master solved the problem of unlimited variety in the pupil by throwing the responsibility back on the parent—if the child did not suit the school he might try another.—But now the school-master is supposed to suit the school to the child, and to give individual attention.

In fact the school-master has lost all his psychological props. He no longer knows what to do; and sometimes he is inclined to lose his temper and say, "If every child is to study a different subject, and every child is to be treated as if he were the only boy in the school,—then why have schools at all? Why not private tutors and correspondence courses?"

Having brought my subject to this desperate pass, I feel

that I am called upon to suggest something in the nature of a *denouement*.

\* \* \* \* \*

There has always been some subtle connexion between Psychology and Magic. In the old days people bought Love Potions ; now-a-days they buy a book on the "Psychology of Personality." These popular psychologies of Will Power, Salesmanship, and so on, appeal to just the same motive which supported wizards—the old infantile wish to get something done without the trouble of doing it.

It was in just this same spirit that the school-master approached the psychologist, "Give me some magic which will enable me to fulfil this impossible task of teaching a class of infinitely different children the infinite variety of the world." The psychologist served out to him one of those Philtres or Potions to which I have already referred. And when it did not work he blamed the school-master's method of administering it. (Herein we find the origin of Training Colleges.)

It does not seem to have occurred to anyone that the school-master is not a magician either. And yet he is treated as one.

The school-master is expected to give individual attention, more skilled than that of a father and mother, to the hundred or more children whom he has to teach.—Surely the individual attention of the child's own father and mother must necessarily be more sympathetic, more fully understanding than that of an outsider who has not had the advantage of seeing the child grow up from infancy, and of knowing the ancestors whose traits are reproduced in him.

Parents cannot be bothered to attend to their own children so they play the hundredth part of a school-master to do the work for them ; and they expect him, thanks to the help of the psychologist, to understand the children better than their own parents.

Cheap magic is what they are asking for.

The school is expected to show the child all the kingdoms of the earth, its governments and its municipalities, its factories and its offices, its mountains, rivers and ancient cities. Thus, knowing the real world in which the parents live, the children will, when the time comes, be ready to step into their shoes.—It does not occur to the parents that they are living in this world of theirs very much more really than the school-master is. Is not the father a member of the Municipality? Has he not got an office? Does he never go on a holiday to 'mountains, rivers or ancient cities'?

The best education a boy can receive is to be given some insight into the life of his own father.

In the good old days, before schools were invented, the father found his growing son a very congenial playmate—and a useful helper. He took him out fishing with him ; he made him hold the arrows when he went stalking ; he made him bind the sheaves. By a natural apprenticeship the son learnt the craft and the hobbies of his father. There is in most men an innate Pedagogic Instinct, which yields some pleasure in "teaching the young idea how to shoot." Men in those days liked to show their sons how clever they were ; and to tell their friends how clever their sons were. But this instinct seems to be dying away, like many of our more manly instincts, under the influence of the artifices of civilization. The modern father does not go stalking or reaping, but he does many other interesting things both of work and of play. To the young all the real world in which his parents live, is interesting. But the attitude of the civilised father is, "Why should I educate my son when I am paying a teacher four rupees a month to do it?" He does not discuss the newspaper with his son ; he is careful not to mention the office when he comes home to tea ; he does not take his son with him when he goes out to a meeting. Then one day he asks his son a few "General Knowledge" questions about the world in which he, the parent, is living,

such as Who is the Governor? What are Rates? What does crossing a cheque mean? And, when the boy cannot answer, he says, "Good God, what am I paying four rupees a month for!"

At its best the school deals with children in the mass and with the elementary common necessities of knowledge. Even the wisest of Head Masters cannot know his children as their parents do, nor initiate them as closely into his own experience of real life as the girl's mother and the boy's father can do. The most intimate things, the most individual thing, the most real things must come from the Home. They are not amenable to the mass methods of the school.

It seems strange that we should have to remind people that the making of children is essentially a Home Industry.

\* \* \* \* \*

What then is the function of the school?—Its function is to do those things which the home cannot do, to teach those things which the Home cannot teach, and to supply those facilities for self-development which the home cannot supply.

First and foremost it has to teach the child the little conformities and necessities which are common to all. The Home cannot teach a child that he is not the only pebble on the beach, that he must conform to custom, be punctual, hide his feelings, not make a fuss, and in general adapt himself and learn to live with other people. The Home has not the pressure of numbers to teach these things. It is just because the school *cannot* individualize that it teaches a boy to fit into a world which is far less able to do so. (By this I do not mean that the school-master is not to know his pupils individually nor help each in his individual difficulties, but, I mean that his lesson is not essentially an individual one. His function is to teach the boy the art of living as one among many.)

Secondly it is the function of the school to teach the child as economically and as effectively as possible certain

knowledges and skills which are necessary to all. It is here that we come to blows with the individual psychologist who emphasizes education as a process of free and natural growth. So it may be, in some things ; but the child has got to learn his arithmetic, and write a decent hand, and spell in the conventional way. I have visited a number of schools founded to embody all those attractive ideals of education as 'free and individual growth.' They have many merits ; but they all seem to be weak in Arithmetic.

There is a third function of education which is commonly attributed to the school, namely the education of the child in the cultured use of leisure. The man has his home, his office and his club. So also the child has his home, his school, (where he learns the necessary things); and there ought to be some place where he can develop his own tastes and cultivate himself in his leisure time. We need a sort of Club-school, a youthful society in which each may discover what forms of culture satisfy him best, and co-operatively develop himself in those things. The psychology of such an institution is essentially the psychology of play.

Where then should the school ask for the help of the psychologist ?

First as to the necessary things,—Reading and Writing and Arithmetic and such things—what can the Psychologist do ?

The Institute of Industrial Psychology under Dr. C. S. Myers sends expert psychologists to investigate the methods of factories. They work in the factories as ordinary 'hands,' and see by what means production may be increased, and fatigue or accidents lessened. The Educational Psychologist should come into the schools and work alongside like that, tell what things the school-master can reasonably expect to be able to do, and how he may do these things better and with less wasted energy of child and of teacher.

There are, as I suggested in my paper to this Congress last year, three processes in such an investigation. The first is psychological analysis of the function aimed at. The second is exact measurement of the result attained. With the help of these two the third process may be performed, namely the perfecting of a practicable and economical system for producing the result required.

The earliest application of this system of investigation to school problems was made by Rice in 1897. He analysed what Spelling ability the child needs in real life ; he endeavoured to measure that ability, and to devise a system of producing that ability. The outcome of his research has been Word-frequency list and the modern system of teaching spelling. If one looks at a Spelling Book of the last generation one cannot but realize what an incalculable number of wasted hours of futile labour has been saved by this simple pioneer investigation.

Life demands rapid and legible handwriting. The Copy-book is not rapid : hence the child reserves one form of response for his writing lesson and a very different form for all his 'real' writing. Thus the web of Penelope woven by the writing master was ten times unravelled during the rest of the day. The Ayres and the Thorndike writing scales supplied a means of measuring speed and quality of Handwriting. With the help of these instruments Freeman has been able to raise the system of practice in this subject perhaps to a higher level of scientific efficiency than that of any other subject in the curriculum.

Courtis and others drew attention to the extreme importance in life of speed and accuracy in the four fundamental processes of arithmetic. The Courtis Tests have measured these functions, and the Courtis practice system provides a most ingenious and effective method of producing the functions required. This piece of work is however an illustration of the importance of clearness of vision in the preliminary analysis. Life does not demand 'speed and accuracy' in

arithmetic in the sense of two variables. It demands cent-per-cent accuracy combined with an adequate degree of speed. Babu Aswini Kumar Dutt has found that the demand for cent-per-cent accuracy very greatly alters the whole conditions and results of the test, and of the practice system.

Prof. Thorndike, the greatest figure in this field of research, has made a brilliant analysis of the teaching of Problems in Arithmetic. Following the lead there given Babu Jogendra Banerjee is endeavouring to discover, as a basis for the construction of a curriculum, what types of problem occur most widely in actual life. The requirements must, of course, vary greatly in different localities and in different professions. It remains to be discovered what common substratum is really needed by all, and what specific adaptations are needed in particular instances.

The number of attempts to measure Reading Ability is legion. The tests themselves show the greatest confusion as to purpose. Some are no more than intelligence tests under another name, and are likely to be a far more effective indication of natural growth than of the success of the teacher's efforts. Others demand the type of reading used by a lawyer in studying a brief and expect the child to apply that to a simple fairy tale which any sensible child would merely skim. We have endeavoured at Dacca to analyse what is the type of reading most commonly used in actual life, to measure it, and to devise a system of training which will produce it. We have met with some success; but the Matriculation examination is an insuperable obstacle to the application of our methods in the schools.

In Foreign Languages a courageous attack has been launched by the Committee on Foreign Languages in America and Canada. Their recently published report gives the results of the most extensive measurement yet made of the effects of Foreign Language teaching in schools.

Measurement of Foreign Language ability have been made

in Dacca and in Calcutta during the past six years ; and we have been able to apply some of the principles thus discovered to the problem of teaching Reading in a foreign language. The system of teaching thus evolved is now being adopted in other countries, Ceylon, Egypt, Africa and elsewhere.

This brief review of what has been done serves only to accentuate the magnitude of the task which yet remains. The field open to such research is unbounded. The promised harvest in increased ease and efficiency of learning in future generations is unbounded ;—but the workers are few.

This paucity of workers is not due to any unfavourable conditions in this country. On the contrary there is no country in the world in which conditions are more favourable for this type of work. There is no country in the world in which schools are more willing and anxious to help in such investigations. A distinguished British psychologist spoke with envy of the opportunities which we have in this respect. There is no country in the world in which clerical labour for digesting the statistical results of measurements is so readily obtainable as in India ; nor is there any worker who has a greater gift of patience.

And yet we find year after year young Indian students going to take their M. Ed. in Leeds, or in Sheffield, or in Manchester. I was shown recently in England a thesis on a most important and fascinating subject, 'The Physical Training of Bengalis'—a wonderful field for objective research and practical experiment. But this thesis had for the most part been composed in the British Museum !

There is no degree of M. Ed. in Calcutta. Only one candidate has as yet appeared for the degree in Dacca. The Indian student prefers to study the needs of his country in the British Museum !

\* \* \* \* \*

We have said nothing yet in regard to that third function of the school, the cultivation of leisure, save that its psychology

is the psychology of play. I think that most of you will agree that, of all the sections in an average text-book of educational psychology, that on Play is the least satisfactory.

And of all the features of the average school this feature is probably the least satisfactory.

There are many adults of our acquaintance, respectable men, cultured men, who cannot draw or paint, and take no pleasure in attempting to do so; others who have no interest in music; others who never read poetry. There are good athletes who do not play football; there are intelligent men who are not interested in Nature Study. There are cultured men who, beyond the common necessary knowledge, have no enthusiasm for reading History.

There are certain Leisure subjects. I do not mean that they are pursued in a leisurely way—far from it; but that they are essentially a matter of choice and enjoyment. But the school has made them compulsory. And the very fact that they are compulsory, and that they are taught in the same atmosphere as the Arithmetic and the Spelling lesson, destroys every atom of their essential character.

These Leisure subjects are not trivial things. To the psychologist, most of all, they are very important things. For, just because they imply an element of choice and of natural inclination, they enable children to differentiate themselves; and these automatically developed differences determine the child's future occupation and place in the world. But the school-master has made them compulsory, and the University or the Department has set a *Pass* examination at the end of the course. They have therefore ceased to differentiate.

And then the psychologist with his Vocational Tests has to be called in to sort the children to suitable occupations, whom the school has so brilliantly prevented from sorting themselves.

The assistance of the psychologist should be used in this case, not as an aftermath in remedying the harm which the

school-master has done, but rather in the first instance in helping to evolve a new type of institution which shall make vocational tests unnecessary. It should be an institution giving the children the widest possible opportunity of being as different from each other as possible. There is something of this type of educational institution in Oxford University, in Boy Scout badges, in a Gymkhana Club, in a Night Technical School—places where you can do what you like so long as you do it with a will. This Play-School should be like the bacteriologist's agar on which the germs of dispositions may develop and reveal themselves.

\* \* \* \* \*

I have shown you two diametrically opposed kinds of Educational Psychology, the one emphasizing the type, the other emphasizing individual growth,

The essential function of the school as it exists to-day is to produce conformity and to teach those elements of knowledge and skill which are the common need of all. The function of educational psychology here is to make the process of learning these necessary things as efficient as possible, by analysing the need, by devising the process of learning and by measuring the result. The more efficiently and expeditiously we are able to dispose of this uniform and inevitable part of education, the more time and energy will remain for the free and more self-satisfying part.

There is need also of a type of institution quite different from the first, namely one which shall give to the growing child the means and the opportunities for developing his own peculiar interests. The more advanced experimental schools of the present day tend in this direction,—the Caldecott Community, the Letchworth Garden City School and Calwell Cook's classes. For myself, I doubt whether it should be called a 'school,' save for mere etymology. I am doubtful

whether it should be in the same building. It would perhaps be better to leave the traditional type of school to fulfil its traditional, and very necessary function; and to develop this new type of institution untrammelled by precedents which are so far opposed to its nature.

Man's essentially constructive mind in the past found a greater affinity to the work of a potter than to that of a gardener in education. Later there was a reaction to liberty and individuality. In some ways it has been found to be a misguided reaction, neglecting those necessary things which had been over-emphasized before.

It is the task of the future, a task in which the school-master, psychologist and the parent must co-operate, to reconcile and to delimit the spheres of these two equally necessary purposes.

There is no country which has greater opportunities than India of contributing to this work, if it will but use them.

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## Nature of Colour Experience of a Partial Colour blind Subject

GOPESWAR PAL.

The discovery of a case of colour-blindness in a psychological laboratory is usually an occasion of rejoicing among the workers, though not to the individual so discovered. We were fortunate enough during the last session in having a student who manifested marked anomalies in his colour-perceptions. He was immediately taken in hand and subjected to a course of prolonged testing.

We all know that it is a task difficult, if not impossible, to classify individuals, manifesting abnormalities in colour-vision, into well-defined groups. Every such person has his own pattern of colour-experiences ; each colour of our normal life has to fit in, with this subjective scheme. Each colour-blind person, therefore, is a type unto himself. While we may give the common name of colour-blind to a number of individuals, we must realise that the individual colour-schemes do not in any way coincide.

A further difficulty naturally arises in all experiments of this nature. We carry on our tests in terms of an objective colour-scheme and set of colour-names which refer to its constituents in every day life. The a-normal individual on the other hand possess a subjective colour-scheme which does not coincide with the first. The colour-names employed by such persons may be verbally identical with those in common usage ; but they refer to the subjective series. A confusion of meanings inevitably arises, and it becomes almost impossible to distinguish between what is objective and what is subjective.

In order that this error may be eliminated it is necessary that the colour-blind person should be subjected to a number of different tests. Only an analysis of the results yielded by a whole battery of tests can lead to a full appreciation of the colour-experiences of the subject. The undermentioned methods were, accordingly adopted:

1. Arrangement of colours in spectral order.
2. Naming of colours.
3. Colour matching.
4. Colour mixing.

*1. Arrangement of colours in spectral order.*

The skeins of coloured wool with a specific colour attribute were spread out on a table and the subject was asked to arrange them in their spectral order.

The arrangement of colours by the subject and that by normal person are compared in the accompanying Chart I.

### CHART I.

#### ARRANGEMENT OF COLOURS.

Normal nomenclature.	Subject's nomenclature.
Dark Brown	... Red-Black.
Red	... Dark Red.
Dark Brown	... Red.
Dark Bluegreen	... ,,
Brown	... ,,
Dark Orange-red	... ,,
Orange red	... Red (with a little yellow).
Green	... Orange.
Yellowish-green (almost G)	... ,,
Yellow	... Light Yellow.

Greenish yellow	...	Yellow.
Orange yellow	...	"
Green-yellow	...	"
Yellowish-orange	...	"
Yellow-green	...	Green.
Orange	...	"
Dark Yellow	...	"
Dark Orange yellow	...	Yellow (with little Red).
Bluish green (almost G)	...	Yellow.
Greenish blue	...	Blue.
V. V. Pale blue	...	Pale Blue.
V. p. Pink	...	" "
V. p. Blue	...	" "
Pale Pink	...	Rose (Blue-Sky colour).
Pale Blue	...	Pale Blue.
Pale Violet	...	" "
Pink	...	" "
Pale Violet	...	" "
Blue	...	Blue.
Violet	...	"
Blue	...	"
Blue violet	...	Deep Blue.
Bluish violet	...	Deep blue.
Dark violet	...	Deep blue.
Dark Blue	...	Dark blue.
Dark Red violet	...	Black.
Black	...	Black.
Violet red	...	Black (may be mistaken for R).
Blue green	{	
Pale Blue green		
V. pale Blue green		
Pale Red-orange		No name and no place.

An examination of the chart clearly shows the peculiarity of our subject's colour experience. He confuses between

Red, Brown and Blue-green. He places Green and Yellow-green just next to Orange-red; this seems to indicate that he gets almost like experience from Orange-red, Green and Yellow-green. The confusion between Y. O. G is most prominent. He sees Violets as Blues, and Purples as Blacks and the confusion between Pinks and light Blues suggests that he has a shortened spectrum at the red-end.

In the subjective scheme, however, some of the colours find no place, for instance, there is no provision of the subjective spectrum for pale Blue-green and pale Red-Orange.

## 2. *Naming of colours.*

Each piece of coloured wool was handed to the subject, who was required to give a name. The result is represented in the accompanying chart II.

### CHART II.

#### COLOUR NAMING.

Colours.	Subjects nomenclature.	
	1st Test.	2nd Test.
Red	... Dark red	... Red.
Brown	... Red	... Red.
Dark Brown	... Red	... Red may be mistaken for Grey.
Very dark Brown	... Red	... Red with Black.
Pink	... Blue	... Blue with reddish tint.
Pale Pink	... Rose	... Blue sky colour.
Very pale Pink	... Rose	... Rose.
Very very pale Pink	Blue with white	... Blue with white.
Orange Red	... Red with yellow	... Red with yellow.
Dark Orange red	... Red	... Red.

Pale Red orange ...	No name ..	Grey.
Orange ...	Green ...	"
Yellowish orange ...	Yellow with red ...	Yellow.
Orange yellow ...	Yellow ...	"
Dark Orange yellow	„ with red ...	Yellow dark.
Yellow ...	" ...	Light yellow.
Dark „ ...	Green ...	Orange.
Light „ ...	Very light yellow	Yellow, may be Green.
Greenish yellow ...	Yellow ...	Yellow.
Green yellow ...	" ...	"
Yellowish green ...	Green ...	Green.
Yellow-green (al- most green.)	Orange ...	Green.
Green ...	Orange ...	Orange.
Bluish green ...	Less yellow ...	Yellow green.
Blue-green (almost green.)	Yellow with red ...	Yellow red.
Pale blue green ...	No name ...	No name.
Blue green ...	No name ...	Red, may be Grey.
Dark Blue green ...	Red ...	Red.
Very „ „ ...	Red ...	"
Pale Blue ...	Blue ...	Blue.
Blue ...	Dark Blue ...	Dark Blue.
Blue violet ...	Darker blue ...	Darker Blue.
Dark Blue ...	Dark blue ...	Dark "
Violet ...	" "	" "
Pale Violet ...	Blue ...	Blue.
Very pale Violet ...	Pale blue ...	Pale Blue.
Red violet ...	Black ...	Black.
Violet red ...	" ...	"

The test was repeated after a period of six months. The nomenclature shows few variations, which leads to the same conclusion as drawn by Dr. Collins namely that the colour blind has a regular colour system which determines the names they employ.

It is obvious from the chart that colour-blind persons do not necessarily possess fewer colour names than the normal persons, though Yellow and Blue occur more frequently in their colour vocabulary. Only in their cases the names do not refer to the same experiences as in case of persons with normal colour vision.

It is a matter of interest that the name Red has a wider connotation for our subject. It means to him not only the actual Red but also Blue-green and Brown. Thus Red, Blue-green and Brown appear to the subject as like colours with the experience of which the term Red only has been associated as the name Red occurs more frequently in our daily life than the names of the other two colours.

The colours Orange, Reddish yellow, Yellow, Yellow-green, Green as well as their names are confused with one another. Thus the hue Orange is not only confused with Yellow-green and Green but it is once called Orange, at another time Green. The confusion of colours is due to the fact that the subject receives almost similar colour impression from each of them and the terms are confused owing to weakness of verbal association, as each of the names occur in our daily life with about equal frequencies—the subject has an equal tendency to associate any of the terms to similar colour impressions which he receives from each of them.

### 3. Colour matching.

The general procedure was the same as in the test of colour arrangement. Sixteen test colours were tried. Each test wool was handed to the subject, who was asked to pick out other skeins of same hue irrespective of shades. The act of matching was undertaken by the subject with great caution. The match wools were finally selected after much hesitation and deliberation. The general demeanour and facial expressions of the subject showed that he was never completely satisfied.

The names of test colours along with the colours matched as also the nomenclature of the subject are given in the accompanying Chart III.

CHART III.

1. To match green which the subject called orange, he selected :—

Yellowish green which the subject called Orange

Orange	...	...	Green
Dark yellow	...	...	"
Yellow green	...	...	"

2. To match red which the subject called Red, he selected :—

Dark Brown	...	...	Red
Orange red	...	...	"
Dark Blue green	...	...	"
Red	...	...	"

he rejected :—

Brown	...	...	Red or Grey.
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3. Bluish-green (almost green) which the subject called Red with less yellow he selected :—

Bluish-green which the subject-called Red with less Yellow

Green	...	...	Orange
Yellowish-green	...	...	Orange
Orange red	...	...	Red mixed with little yellow

he rejected :—

Brown	...	...	Red.
-------	-----	-----	------

- |    |                                    |     |     |  |
|----|------------------------------------|-----|-----|--|
| 4. | Dark Blue-green                    | ... | ... | Red  |
|    | he selected :                      |     |     |  |
|    | Dark Blue-green                    | ... | ... | Red  |
|    | Dark Brown                         | ... | ... | Red  |
|    | Dark Orange-red                    | ... | ... | Red  |
|    | Brown                              | ... | ... | Red.   |
| 5. | Pale Blue-green                    | ... | ... | No name  |
|    | he selected :                      |     |     |  |
|    | Pale Blue-green                    | ... | ... |  |
|    | Pale Red-orange                    | ... | ... | May be light grey.   |
| 6. | Yellow-green                       | ... | ... | Green  |
|    | he selected :                      |     |     |  |
|    | Yellowish orange                   | ... | ... | Red mixed with<br>R. (no special<br>difference bet.<br>R. & G.). |
|    | Dark Yellow                        | ... | ... | Green  |
|    | Orange                             | ... | ... | Orange   |
|    | Yellowish green (almost Green)     |     |     | Orange   |
|    | he rejected :                      |     |     |  |
|    | Yellow-green (afterwards selected) |     |     | Green  |
|    | Greenish yellow                    | ... | ... | Yellow.  |
| 7. | Pale Red-orange                    | ... | ... | no name  |
|    | he selected :                      |     |     |  |
|    | Pale Red orange                    | ... | ... | "  |
|    | Pale Blue-green                    | ... | ... | "  |
|    | Very pale Blue                     | ... | ... | Blue with more<br>White (almost<br>White).                       |
| 8. | Orange                             | ... | ... | Green  |

he selected :

Orange	...	Green
Yellowish-green	...	Green.

9. Red-Violet ... Black...may be Red

he selected :

Purple	...	Black
Very dark Brown	...	Black
Black	...	Black.

10. Pink ... Rose or Sky colour

he selected :

Pale-Violet	..	Blue
Pink	...	Rose
Pale-Blue	...	Pale-Blue
Very pale Blue-green	...	No name.

11. Very pale Pink ... Rose

he selected :

Very pale Violet	...	Light Blue
Pale Pink	...	Blue
Very pale Pink	...	Rose
Very pale Blue	...	Light Blue.

12. Pale Blue ... Blue

he selected :

Pale Violet	...	Blue
Very pale Blue	...	Pale Blue
Pale Blue	...	Blue.

13. Violet-blue ... Dark Blue

he selected :

Violet	...	Dark Blue
Violet-blue	...	Dark Blue
Violetish blue	...	Dark Blue
Blue	...	Dark Blue
Dark Violet	...	Darker Blue
Bluish violet	...	Very dark Blue.

14.	Pale Violet	...	Blue
he selected :			
	Pale Violets	...	Blues
	Pale Blues	...	Blues.
15.	Dark Violet	...	Very dark Blue
he selected :			
	Violets	...	Blues
	Blues	...	Blues.
16.	Brown	...	Red
he selected :			
	Brown	...	Red
	Very dark Blue-green	...	Red
	Blue-green	...	Red
	Green	...	Orange
	Dark Blue-green	...	Red.

The subject called Browns Red ; but in matching Brown he selected Blue-green, while in matching Red he rejected Brown. Thus he noticed greater similarity between Brown and Blue-green than between Brown and Red.

The chart gives results which serve to substantiate what we have already found in other tests, namely (i) the confusion between R. B-G and Brown, (ii) the confusion between Orange, Yellow-green, dark Yellow and Green, (iii) marked confusion between Blue and Violet, (iv) the confusion between pale pink and pale Blue (v) Green is not confused with Red; but when Red inclines to Yellow, it is confused with Green or when Green inclines to Blue, it is confused with Red. (vi) Purple appears to the subject as Black, (vii) pale Red-orange is matched with pale Blue-green and very pale Blue, for which the name pale White is given. The most interesting point is that all the colours matched with Red and Blue are called Red and Blue respectively, those however which are matched with G. O. and Yellow-green are given different names. Though the subject was asked to select match colours

irrespective of shades, he neglected colours which to the normal eye differed very slightly in brightness only, as for example to match Blue-greens he selected only the given (test) colour from among different Blue-greens.

#### 4. Colour mixing.

The relations between colours exhibited in the tests of colour matching can be quantitatively investigated by means of colour mixing experiments. The usual method of determining colour equations was employed.

The coloured equations are given below:

#### COLOUR EQUATION.

##### (1) Green = Bk + W

Proportion of G & W. As named by the subject. As appeared to the normal eye.

360G	... Light Yellow	... Green
340G + 20W	... Pale Yellow	... Green
	with R tint	
180 + 180G	” ”	Greenish
100G + 260W	W with Y tint	Very pale Green
80G + 280W	W with Y tint	Almost W with pale G tint.
60G + 300W	White	White.

The subject could not match the Green or diluted Green with Grey. Green appeared to him as pale Yellow, and the diluted Green was called Reddish yellow. When Blue was added to the inner discs a match was found.

$$175W + 105G + 80B = 115Bk + 245W.$$

The inner colour appeared to the normal eye as pale Blue green. When more Blue was added the subject called the mixed colour Blue, whereas addition of more Green gave rise to the sensation of yellow.

$$(2) Red = Bk + W$$

$$(i) 140R + 220W = 230W + 130Bk.$$

$$(ii) \quad 145R + 215W = 210W + 150Bk.$$

(Obtained after a period of three months.)

$$(iii) \quad 280R + 80Bk = 315Bk + 45W$$

$$(iv) \quad 300R + 60Bk = 250Bk + 110W.$$

The pale R was matched with Grey and again the dark R was matched with dark Grey.

360R was called R, while the R was mixed with W: the diluted R was named R and the subject could not match the diluted Reds with Greys until the above proportions were reached. Greater diluted Red was not recognised as Red but as White. But when R was mixed with Bk the subject called at once the mixed colour dark Grey. The subject was highly satisfied with the match. Any addition of Bk beyond the above proportion excites Grey.

### (3) Green=Red

No match was obtained from the subject for he could recognise a yellow tint in the Green discs in all cases when Green was diluted and darkened, so B-G disc was tried and it was found that  $170BG + 190W = 125R + 235W$ . Thus pale Blue-green and pale Red were equivalent and  $160BG + 200Bk = 270R + 90Bk$ . Thus dark BG was equivalent to dark Red.

### (4) G+R=Bk+W.

Proportion of G and R	The mixed col. as called by the subject	The mixed col. as called by a normal individual
360G	Light yellow	Green
$300G + 60R =$	Yellow	"
$270G + 90R =$	Yellowish orange	"
$240G + 120R =$	" "	Yellow green
$220G + 140R =$	Greenish orange	" "

200G + 160R =	Orange	Green yellow
180G + 180R =	"	Dirty greenish yellow
170G + 190R =	"	" yellow
150G + 210R =	"	Redish yellow
110G + 250R =	"	Red yellow
60G + 360R =	"	Red.

Mixture of Red and Green in any proportion appears to the subject as orange

When Blue was added to the inner disc an equation was at last obtained

$$50R + 58B + 252G = 150W + 210 Bk.$$

$$(5) R = Y + Bk.$$

$$285R + 75 W = 260 Bk + 100Y.$$

The inner discs appeared to the normal eye as Red whereas the outer discs appeared as very dark (dirty) Yellow.

$$(6) G = Y + Bk.$$

Green could not be matched with Yellow-Black. The inner and outer disc differed very much in shades. G appeared to the subject as light Yellow : so instead of Bk, W disc was mounted,

$$360G = 285Y + 75W.$$

$$(7) O = Y + Bk$$

$$360O = 90Y + 270Bk.$$

(8) As called by the subject.

As appeared to the normal eye.

360Y	Yellow	Yellow
340Y + 20Bk	Yellow	Yellow
300Y + 40Bk	Yellow	Yellow
220Y + 140Bk	Yellow	Yellow
200Y + 160Bk	Orange	Yellow

180Y + 180Bk	Orange Yellow	Y (dirty)
160Y + 200Bk	Black-Orange with Yellow	
	Y tint	
100Y + 260Bk	Colour of blood	Very dirty Y
50Y + 280Bk	Deep Red	"

One of the facts brought out in this series of experiments is that the subject is more sensitive to changes in brightness than to hues. The capacity to discriminate shades of brightness is much greater than that in the case of normal persons. The most significant fact is that different shades of grey and yellow are matched with different hues, and that red and orange appear to the subject as dark yellow while green as pale yellow. Different shades of R are matched with different greys.

The colour equations however did not seem to satisfy the subject it was only on occasions that a perfect equation was found. This is probably due to the fact that the subjective series of experience is so very different from the objective pigment colours.

#### Conclusions.

1. The subject is red-green blind with shortening of the spectrum at the red end.
2. The following colours are confused :—
  - (a) Red, blue-green and brown with one another.
  - (b) Green with pale yellow.
  - (c) Orange, reddish yellow, yellow, yellow-green and green with one another.
  - (d) Violet with blue.
  - (e) Pink, violet and blue with one another.
  - (f) Purple with black.

3. He does not see red and blue-green as normal individual sees them for different reds and blue-greens are equated with different greys. Thus blue-green and red appear to him as different shades of grey.

4. He can sometimes recognise red—when it is full red and when it is mixed with white or yellow, but he cannot recognise red when it is mixed with blue or black.

5. He can derive Red, O, Y and G by mixing yellow with Bk or W in right proportion.

6. The capacity to discriminate shades of brightness is much greater than in the case of normal individual.

7. The colour nomenclature remains almost constant. In the colour vocabulary, the terms yellow and blue predominate, green seldom occurs, 'red' is more frequently met with than green. This preponderance of the term red over green can be readily explained in terms of verbal association.

8. The general demeanour and facial expressions of the subjects during the time of testing often indicate the abnormalities.

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## The Ways of Sex

H. D. BHATTACHARYYA.

( 1 )

Inspite of the growth of a sane view of sex in progressive societies in recent times, a writer on the subject is still liable to be misconstrued either as a lewd person or as a rank Freudian. But the general interest that he is able to arouse speaks more eloquently than any overt condemnation that he has touched a sympathetic chord in his fellow men and made them enjoy in heart what they dare not acknowledge in words. In this there is the added reason that convention, cowardice and conscience smother many an overt sexual feeling and act; but the human, all-too-human, instinct has nevertheless devious ways of emerging to light out of the dark caverns of the soul and eludes the vigilance of the most scrupulous mind with its multifarious cloaks of disguise. Even the most moral men may sometimes fail to understand the sexual etiology of their apparently innocent acts, and they will probably resent being told about their true origin. We must leave them to time and training for enlightenment and to their sense of veracity for honest confession. Already the psychologist has acted as a father-confessor to many an 'upright' mind and absolved many 'abnormal' souls from the weight of their sexual maladies. Rather than define humanity in sexless terms he is content to study patiently and with confidence frigid types in order to catch in them the faint glow of a mighty fire which consumes some natures, makes others resplendent and mildly lights up the rest. Man, to his biological knowledge, is after all a glorified beast even though the religious scriptures assign to him a place a little lower than that of the angels.

The broad highways of sex are so very well known that a bare mention of them is enough. We have in every society some men and women who are consciously polygamous or polyandrous in their tendencies, or rather urged by their sexual drive to pursue and win by love or money or force or anything else a partner of the opposite sex. When promiscuity is no social taboo, the gratification of sex is an easy matter, and repeated indulgence only serves to feed the flame of lust. In many primitive societies such gratification is indulged in quite freely. But when incest barriers and other social restrictions are set up, the current of sexual energy is restricted to definite channels, till in civilised societies it is confined within the high embankments of monogamy outside the prohibited degrees of relationship. But where the sexual drive is insistent (whether by natural tendency or by artificial excitation) it overflows the bounds of decency and decorum ; then we have instances of adultery, seduction, prostitution, rape and criminal assault, or, in the alternative, the permissible procedure of judicial or ecclesiastical dissolution of the marriage tie, followed by a fresh matrimony or unchecked license. Where sex is sought to be gratified without conjugal infidelity or without the co-operation of a person of the opposite sex, we have sexual aberration of the types broadly represented by homosexuality and onanism. Such abnormal practices as pederasty, bestiality and necrophilia are indicative not only of sexual perversion but also of a lack of courage in approaching beings with a will of their own.

The transition from such overt sexual acts to subtle forms of sexual motivation is so gradual that we sometimes feel a difficulty in drawing the exact line of demarcation between the highways and the by-ways of sex. While sexual assault would be an undoubted case of patent sexuality, exhibitionism and indecent gesture would probably be regarded as less offensive. Again, while sexual excitement at the

sight of a person of the opposite sex (nude or draped) would be regarded as unseemly behaviour even by the person himself, simple staring at such a person would probably be ignored as inoffensive curiosity ; and yet, as an Indian artist has painted in one of his characteristic pictures, a whole trainload of men would stare hard at an alighting female figure, much to the confusion and discomfort of the latter, without acknowledging any sexual motive. Man has long passed that stage of biological necessity where the recognition of the female for the purpose of race-preservation was a paramount necessity. But the instinct still persists inspite of social disapprobation, and that is why Christ had to say that by simply looking wistfully at a woman a man commits adultery with her. The difficulty, however, is that the man may not feel that he is wistful—he simply stares.

The fact is that from a certain stage onwards a person of the opposite sex has a magnetic influence and no man can react to a mixed gathering or to a company of women in the same way as to an assemblage of males. His conduct will almost invariably be characterised by a kind of noble or decorous demeanour which has its analogue in the strutting of animals before their dames. What person goes to a society of the opposite sex without some touch of finery or aesthetic in dress and other personal decorations ? While a clean suit, a smooth shave or a trimmed beard and a neat turning of the hair would probably make up the total equipment of a man, a woman must have, in addition, a neatly designed dress of the latest fashion to show to the best advantage the charms of her bust, and enough of rouge, cosmetic and scent to set off the beauty of her face, hair and general bodily appearance. The sexual advance of each is characteristic. The man puts forward his best endowments—brilliance of speech, strength of body, readiness of wit, extravagance of wealth, store of learning, accomplishment in aesthetics and ardour of passion—to attract, engage and

win the woman, while the woman, in her turn, assumes a coy submissiveness, a childish coquetry, a demure discipleship, furtive glances and a subdued passion to spur the man on to more energetic wooing. And the fun of the whole thing is that neither will probably admit that any sexual motive entered into this altered behaviour. A pair of animals will do nothing more nor less in the company of each other when sexually excited ; but they cannot play hide and seek with their own feelings—that is the only difference. When confidential whispers, meaning glances, imploring requests and smutty jokes begin, we may at once conjecture that the conscious sexual motive is not much behind to do its work. The next stage is represented by the establishment of physical contact—sitting close together, occasional touch to draw attention or express approbation (*e. g.*, gentle patting), accidental meeting of the two bodies, nudging, helping in the arrangement of dress, and, passing on thence to wider contacts—walking arm-in-arm, dance and embrace, and culminating in kissing and intercourse. In this ascending series it is very rarely that the conscious sexual motive is absent.

But when man-or woman-hunting would be set down to conscious sexual habit, what are we to say of constant association with members of the opposite sex where sex-gratification is an unlikely contingency ? In every society would be found men and women, married as well as unmarried, who unconsciously gravitate towards the sexually opposite company—men who throw themselves into female company and women who prefer the society of men. In such a company a person attracts more attention because of the small number of persons belonging to the same sex and at the same time gratifies an unconscious sex-attraction in the presence of members of the opposite sex. Instances are not unknown of men who appreciate very highly their secretaryship or membership of the governing bodies of girls' institutions or their role as visitors to such institutions.

Under the same category would come the habit of presiding over ladies' gatherings, distributing prizes in girls' schools, and addressing ladies' meetings; and the more exclusive these are of other males and the more frequently such opportunities are sought or availed of, the surer is the chance that an unconscious sex-motive is at work, notwithstanding the fact that such persons occupy prominent positions in the religious, educational, political or economic world. The sex-motive is veneered over or veiled by an anxious solicitation to help the weaker sex with personal advice, and the disguise becomes complete in a community where women do not freely mix with men in public gatherings. Benevolent bachelors, abstinent husbands, middle-aged widowers and over-sexed persons are the ones likely to suffer most from this mild malady, for in them the ungratified sex-impulse finds in such opportunities an unconscious satisfaction.

It is very likely that a similar diluted sexuality is at the root of many of the humanitarian movements calculated to benefit the weaker sex. The organisers of women's protection leagues and rescue homes, of widows' homes, and orphanages for girls do not always act from saintly motives. We are occasionally startled with scandalous disclosures in such institutions; but these are only overt indications of the smouldering sexuality that probably larks within many minds connected with such movements or institutions and that predisposes men to support them with money. Similar movements to protect helpless men against designing women or to provide workhouses for men only would evoke less enthusiasm among men, and languish for want of funds after a short time. The more immature the age the greater the chance of a conflagration: that is why for such female institutions old age is such a great qualification, for if romantic enthusiasm does not inspire the noble work, neither does decaying sexuality threaten a fall. The actual work of rescue or giving temporary asylum still has an element

of pity or sympathy mixed with it; but when it is replaced by the dull duty of continuous caretaking, only money or very powerful humanitarianism or else a disguised sex-instinct can serve as a motive—the last when the rescued persons are young and are not likely to be removed from protection soon and the person in authority not too old and willing to work for inadequate remuneration. Accessibility of the inmates may act as an added stimulus but is not a necessary condition, for in the absence of such a privilege the person in question has generally a female associate (wife or sister, matron or superintendent) who can satisfy his curiosities regarding the life of the inmates and through whom he can convey his solicitude to the proper quarter. It is a mistake to think that a man will help women when there is a hope of return or recognition: the matter is far more complex than that, for often the pleasure of silent service is an enough inducement. A distinguished teacher once confessed to me that in his youth he found great pleasure in arranging benches on which girls would sit although there was not the slightest chance of his services being gratefully acknowledged, or even known.

I am prepared to hazard the guess that a similar sex-motive is at work in the minds of many protagonists of residential facilities for women. There may be some idea of smoothing the transport difficulties but there may also be a secret satisfaction in the thought that "a thousand hearts lie fallow" within the precincts of the dormitory and that

" Pretty were the sight  
If our old halls could change their sex, and flaunt  
With prudes for proctors, dowagers for deans,  
And sweet girl-graduates in their golden hair."

The same is the case with some of those who endow such hostels: in them the thought that young girls should tread

and fill with laughter the halls erected at their expense yields a supreme satisfaction. I suspect that the recent developments of co-education in all branches of study has a similar origin: it is not only motivated by the subconscious sexuality of the champions but there is sometimes also a mixoscopic interest in the scheme as it provides opportunities for the meeting of young people of opposite sexes and their ultimate union, permanent friendship or temporary flirtation, in the mere thought of which there is joy in some natures. We need not refer to the direct sexual motive of the scholars themselves; for, as a girl of a co-educational institution in Bombay recently declared in a debate, "it is exceedingly dull without boys," or, as a Dacca University student put it, "the presence of women students stimulates study"—only that he failed to notice that the stimulation is of the same type as that seen in the cases of pigeons and other animals that cluster round a female of their own species and put forth their best to attract and win her.

More patent and less self-centred is the sexual motive in such mixoscopic occupations (honorary or remunerative) as chaperoning, match-making or acting as go-between. There is a kind of vicarious enjoyment in the thought that there would be a union of two sexes as a result of personal endeavour. The sexual excitement may here be more subdued than when one is engaged in making an animal cover a female before one's eyes, but it is undoubtedly of the same kind and very often serves as an outlet for one's own unsatisfied sexual craving. There must be a complete absence of jealousy or the mixoscopic function will degenerate into veiled personal sexuality, as when, under the pretext of choosing the brides of friends in communities where marriage is settled by negotiation, a person examines a lot of female faces and is lionised for the trouble at the same time. Another type of the same function is seen in the universal interest in love-comedies. As Talmey puts it, "All the world

loves the lover, when the world is allowed to assist at the scene of love-making and partake of the erotic delights of the lover. When the lover is alone, nobody notices him. This love to assist at erotic scenes is based upon the desire of procuring for oneself sensual gratification in an indirect way, by the aid of a third party, with whom one identifies himself and in whom one submerges his ego so as to experience this person's emotions." The mixoscopic complex works in such diverse ways that it is sometimes difficult to trace the uniformity of outlines in them all. While the interest of the parents will not go further than a genuine desire to see the children settled in life and continuing legitimately the family-line, others will be impelled by other motives in the business. Thus, while a widow, an old maid, a woman just past the period of the menopause, an old woman still hugging the memory of her own sexual life and such other women will, if there has been nothing wrong with their training, generally go no further than acting as match-makers and rekindling for a moment the dying embers of their own sexual life, a woman with a questionable past or in receipt of low wages or plying small trades or living on charity, when she is not actuated by strong ethical sentiments, will readily act as a procuress, especially if she is herself strongly sexed. The Indian Science of Erotics has some very acute discussions about the type of women that should be employed as go-between and relies mostly upon these psychological characteristics.

Paradoxical as it may appear, those who try to prevent marriage are in many cases equally prompted by sexual motive. Where the desire for personal gratification cannot be subordinated to the sense of vicarious enjoyment, there appears ill-will or spite and, out of it, the attempt to thwart engagement or marriage. Very often the jealousy is not articulate and does not even proceed from an insistent sexual urge. The same instinct that prompts a bull or a dog or a pigeon to interfere in the mating of other members of the same species

is at work here : the thought (very often unconscious) that the sexual enjoyment should go to another is unbearable and prompts a reaction of interference. But as in human society there is no room for physical interference (for the union does not take place all at once or in the open but is preceded by preparations for marriage), slander, gossip and scandal-mongering take its place to effect the same purpose ; and in communities where the parties are united by negotiation and not by mutual love or where the qualifications of the parties are scanned retrospectively and not prospectively these do influence matters to a very great extent. The psychology of interference is exactly the reverse of mixoscopy—there is as much displeasure in the first as there is pleasure in the last, at the thought of the sexual union of others.

Far more subtle, however, are the ways in which sex-interest determines the choice of profession. While, in some cases, profession is determined by necessity, there are other cases where it is determined by natural or acquired inclination. It is not unlikely that in some cases the choice of the medical profession with its opportunities of seeing and examining women is sex-motived, particularly so when there is a tendency to specialise in gynaecology and obstetrics, women's functional troubles and venereal diseases, genito-urinary complications in general and contraceptive practices. A displacement of the sex-instinct from the genitals to the breasts may make a doctor a specialist in pulmonary tuberculosis and heart-disease. A sadistic tendency may prompt osteopathic practices while a vague and unspecialised sex-interest may lead a doctor to limit his practice to the diseases of women and children. It is a mistake to think that an intimate acquaintance with the human anatomy wears off the romance of sex. This is as much true as to say that in a society where women do not observe the *purdah* a female face in the street causes no perturbation in the heart of a male or that an astronomer does not enjoy the glory of a moon-lit

night because he has a scientific knowledge of the planets and stars. What really happens is that the excitement becomes more and more subdued and the interest sinks below the level of consciousness, just as country people acquainted with the details of animal breeding are less fluttered at the mention of sex than an urban population. It is likely that the choice of a milliner's profession is dictated by the same motive, for no one can contemplate the style and cut of a woman's dress (especially bloomers, corsets and other underwears) without taking into account the contours of the female body. There may be a fetishistic motive here as in specialisation in women's footwear, but of this I am not sure.

While on the subject of the choice of a profession, reference may be made to certain occupations where the sexual motive is more patent than in the above. To take to the stage or to the cinema is very often inspired by a conscious or unconscious desire to have opportunities of mixing freely with the opposite sex. Unmarried men and women may, in addition, have a few hours' illusion of married life while acting as a husband or a wife. In those who have already had sexual experience the opportunities of stage-life provide an outlet for a polygamous propensity from which few men are free. That the hidden wish may become an accomplished fact is proved by the comparatively low level of sexual steadiness among actors, actresses and artists in general almost all the world over. As a matter of fact, the sex-motive inspires not only the players but also a considerable number of the writers and the play-goers as well—the last specially in communities where the only female faces seen are of those protected by the incest-barrier. To this category also belong music and dance, specially the latter. The former may indeed be enjoyed by the musician himself in private, but one possessed of a well-stocked repertory of songs is bound to have the same thrill in singing love-songs as the composer certainly did.

Dance with a partner of the opposite sex is more obviously sex-inspired, for under the garb of an innocent diversion it provides opportunities for intimate contact with the person of a member of the opposite sex in an atmosphere where the lasciviousness is heightened by semi-exposed female body lit up with an artificial light, music, scent and stimulating beverage. In this surcharged atmosphere rhythmic movement of the body, mellowness of temper, confidential whisper, repeated contact and tender care-taking of a fatigued female frame all combine to produce an air of romance and powerfully stimulate the sexual feeling. As Dr. Bauer observes, "The intimate contact of the two bodies, which modern chastity and morality would never permit in any other circumstances, has a marked erotic stimulus through the sense of touch; the quickened breathing and heightened pulse are unconsciously conveyed to the partner; the odour of the body and the hair, both of which are erotically stimulating—all these factors unite to have an enormous effect. A whispered word of love, or a kiss pressed on the hand or shoulder, may augment it still further. But the eye also plays its part; the eye of the man finds pleasure in the décolletage of his partner, and she seeks the evidence of his desire in the glance of his eye." Commenting on the greater fondness of dance among women, the same writer remarks, "Women's attitude to the sexual act is very different from that of men. The corectation impulse is already satisfied by all those preliminaries of the actual coitus which we call love-play. A woman obtains much more satisfaction from these than does the man, and in fact experiences a sort of 'forepleasure' if we may call it so. This may go so far that the woman may dispense altogether with the orgasm proper. Thus we have the explanation of 'flirting,' which Weininger calls *coitus par distance*. Without actual connection with a man, the slightest bodily contact enables her to experience all stages of tumescence and detumescence in fantasy. She can

reach the climax of eroticism, and, as it were, satisfy the concrectation impulse psychically." The usual sexual orgies attending seasonal dances in savage and rustic societies are the logical culminations of the heightened sex-feeling brought about by the round dance where couples pair off and whizz past one another. Nor are solo and ballet dances free from eroticising effect, for the suggestive movements and the prominent display of certain parts of the body provide a sexual gratification to the spectators, and where, under the pretext of classicism, *e.g.*, Salome dance, beads and gossamer dresses more reveal than conceal the contour of the body, the sexual excitement is quiet intense. No wonder that the sexual gratification provided by all types of dance should ensure their popularity among all normally constituted men and women and bring down upon them the wrath of the clergy and the social reformer. If Plato could recommend the abolition of all Lydian and Ionian airs in his Republic because of their enervating effect, it is not surprising that the Holy Catholic Church should prohibit Tango dance because of its effects upon the sexual instinct. Any bodily movements that throw the breasts, hips and buttocks into prominence or flush the cheeks or quicken the breath are likely to evoke erotic thoughts in some minds or others. When this is the effect of dance on the spectators, its influence on the minds of those actually taking part in it is likely to be much greater and the choice of dancing as a profession is likely to be sex-motived. As a matter of fact, the known probability of having opportunities of mixing with the opposite sex determines in any given case how far the profession has been chosen from a sexual motive, whether that profession be that of a medical man with his opportunities of examining eroticising parts of the body, or of a nurse with her humanitarian, financial and sexual motives all mixed together, or of an artist having the privilege of passing hours of intimate interchange of thoughts, feelings and actions with his models or fellow-artists of the opposite

sex, or of a school-master or a clergyman having a kind of intellectual or spiritual dominion over women, or even of a psycho-analyst before whom the intimate events of personal life are laid bare. The deciding factors are opportunity, intimacy and power but not necessarily physical contact. When the last is also immediately or remotely possible the temptation to embrace that particular profession becomes almost irresistible, especially to one with an abnormal sexual tendency.

But there are others also whose interest in sex manifests itself in subtle ways. One need not necessarily take up the profession of treating the bodily or mental ailments of persons of the opposite sex: it is enough if the profession chosen is such that an ideal construction of the sexual life of others is frequently possible. One such profession, for instance, would be that of a lawyer or advocate who specialises in cases where the sexual life of his clients is involved. Rape and adultery, seduction and abduction, elopement and solicitation, indecent assault and unnatural vice provide an ample crop of cases in modern courts of law, especially where the marriage tie can be loosely broken and the parties are not debarred from a fresh union on the unnatural termination of an old bond. That all such sexual phenomena have a general appeal is proved by the fact that no court conducting divorce proceedings or trying any of the events mentioned above lacks a crowded audience. The amount of space that reports about such cases fill in newspapers meant for general circulation, betrays not only the taste of the editorial board but also the cravings of the general public to which such papers cater news. The attempt of the judiciary to exclude the lay public from such proceedings, to hold examinations of witnesses in camera and to censor publication by appeals to news agencies cannot be said to have been very successful, for a paper can always rely upon a brisk sale by pandering to the never-failing interest of the community in sexual matters. There is a kind

of subdued sexual excitement during the perusal of such reports and some papers thrive purely by providing such excitement. When such is the feeling of the general public, it is no wonder that where education and opportunity permit, a person with a decidedly sexual tendency should join the criminal bar and whet sexual appetite and find sexual satisfaction at once by advocating the cause of one or other party in a case where sexual abuse of any kind has taken place.

The habit of scandal-mongering similarly owes its origin to two causes. The one is a mild vicarious satisfaction in contemplating and discussing the sexual life of others and the other is an amount of spite that the personal satisfaction is only ideal and not actual. On analysing a scandalous rumour that has passed through many hands, one is surprised to note, as Jung has shown in his paper on "A contribution to the Psychology of Rumour," how round the nucleus of an originally small aberration there gather elements contributed by the successive media according to the Freudian principle of wish-fulfilment. Each person adorns the tale by interesting details which he has not heard but which, he thinks, ought to have been there to make a neat round story and which he subsequently comes to believe, by constant reiteration and a resulting self-deception, to have actually taken place. A habit of scandal-mongering argues a strong sexual life on the part of the subject, and probably also an ebbing sexual satisfaction which thus recoups itself by increased interest in the sexual life of others and creating ideal phantasies which give a kind of personal gratification. There is the same kind of pleasantness in silly gossip and scandalous rumour as in ordinary day-dream where there is a temporary flight from the unpleasant realities of one's own life-experience into the realm of fancy which is far more pleasurable in idea.

Where the censorship is partially effective, and age, ethics and occupation demand that undue prurience about the aberrant sexual lives of others should be checked, it may

still happen that the eye should involuntarily turn to the newspaper column announcing births or engagements and marriages of persons who are total strangers. This can alone explain why in most illustrated journals the pictures of newly married couples figure so frequently: the readers find a kind of unconscious pleasure in scanning such pictures of people who are entering upon a legitimate sex-life. The perusal of columns in which secret assignations are made by parties under a nom-de-plume is more consciously motivated, for the romantic imagination takes up the slender cue and follows the stages of clandestine or prohibited love under the influence of repressed sexuality. In extreme cases, a passing carriage with the blinds down or a neighbouring subdued whisper may suggest a romance in which sex plays an important part. It is quite a familiar thing for a suspicious husband (who is either oversexed himself or conscious of being undersexed) to be jealous when the wife carries on conversation with a male friend in whisper or in a corner.

The sex-life of the real and the living has all the fascination and intensity of an actual sensuous experience. But the opportunity to study it does not come to all or at all times. In such cases picking up the wild oats that famous men of a former generation sowed may prove an interesting occupation. In most persons the admiration of greatness is mingled with jealousy, and the ability to prove that it was coupled with sexual weakness has a reassuring effect on the personal sense of their own littleness. Let us excuse Pericles and Julius Caesar for they were heathens. But what a comfort to know that the Christian Goethe, Heine, Byron, George Eliot, Swift and many other famous men and women, inspite of their lofty thoughts, were after all frail in their sexual lives! With what a triumphant smile of self-complacence the recent disclosure about the secret sex-life of Wordsworth—the moral, religious Wordsworth—must have been greeted by the sexually loose! In all these cases there

is no room for scandal, which pertains only to the living ; but there is scope for ridicule and self-gratification—of unalloyed sexual thought when there is no jealousy and of spiteful self-complacence when jealousy is present.

But scandal and ridicule imply the presence of at least two persons interchanging their thoughts, feelings or opinions sympathetically. It may however so happen that there is no second person with whom such interchange is made. In such a case the enjoyment must be entirely personal, and it is this kind of satisfaction that one derives when perusing the biography of Byron or Madame Stael. When the person belongs to the same sex as the reader, there is an unconscious identification with the principal character of the sex-drama and a vicarious enjoyment through lascivious imagination, while the immoral sex-life of a person of the opposite sex creates in the mind of the reader an imaginary situation in which the object of the affection is the reader personally, *i.e.*, there is an identification with one of the objects of the chief character's love. Where the possibility of identification meets with a check, as when one peruses the biography of a much married person, the sense that legal union does not permit indiscriminate casual connections inhibits the scope of identification and romance and to that extent prevents lewd thoughts. The same psychology explains the popularity of indecent stories or, as some are euphemistically called nowadays, realistic novels and dramas. Here the element of reality being totally absent, one can wholly abandon oneself and complete the identification without let or hindrance. Besides, the details being under the control of the writer, they can be so manipulated as to raise sexual excitement to the highest pitch. Society has not failed to see the danger of unchecked extravagance in pornographic descriptions and insisted on a certain amount of decorum in compositions that circulate in the country just as it has prevented the free circulation of obscene pictures.

Of course, it is always the permissible sexuality in any country that determines whether any particular representation of sexual life in writing and picture should or should not be considered as indecent, and that is why George Bernard Shaw finds it easier to secure a publisher and a clientele in the United States of America than in England and also why certain things should be permitted in French but not in English. But whatever be the amount of permissible pornography, the fact of its existence in all civilised countries at the present moment is undoubted.

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### Notes and Abstracts.

*British Journal of Psychology, July, 1927.*

(*The relevance of visual imagery to the process of thinking, by T. H. Pear, F. Aveling and F. C. Bartlett.*)

Pear discusses a number of features of visual imagery, e.g., its variations in frequency, clearness and quickness of recall, its course of development, its value for abstract thinking at different stages of development, etc. He cites certain introspectional data and concludes that visual images are generally relevant and useful for abstract thinking. The experiments of the Würzlewg school, those of Betts and Carey as also of Martin show, that images are irrelevant for thought and can be successfully eliminated.

Aveling cites his own experiments on the subject. Non-sense words were associated with significant pictures, and were presumed to have acquired a meaning through this process of learning. The words were then used as grammatical subjects to which the observer was required to supply a suitable predicate. It was found that the imagery was not relevant to the process of predication.

Bartlett presents a constructive view on the question. For him "having images and being able to think are further extensions of that process of developing long distance receptors which is at the basis of the growth of the great brain." This extension of receptivity develops by stages. At a low level there is a lowering of the threshold in reaction. At a higher level a new incoming stimulus, similar to an old one, is reacted to with a certain readiness. There develop what Head calls *Schemata*. The present stimulus is reacted to in its relation to the past stimuli-systems and situations. But the latter tend to operate in a mass rather than as single units. This is manifest in chain reflexes, circular reactions,

rote memory and unwinding of habits. In these instances, the series of reactions is of much greater value than the elementary movements. Thus, if there is breakdown at any point, the whole chain collapses. The function of image is to represent parts of this chain picked out from the whole. In this way, image ensures a greater variability in reactions. It is utilized in thought so far as the latter leads to variability and gradation of responses. The visuales image, however, tends to individualise situations and do not allow a wide variation. Moreover, the images combine according to laws peculiar to vision. Hence, the complex of visual images do not correspond the rounded off systems of thought. Thought is biologically subsequent to the image-forming process. It arises when the 'massed' influence of past stimuli and reactions has been broken and when the 'sequential' tyranny of reactions has been overcome. Thought consists of qualities and relations which may be represented in images. But such representation is not essential nor is it determined by the images. It is thought which determines whether or not the images are relevant and are to be employed.

*Does the Psychogalvanic phenomenon indicate emotion?*

*R. J. Bartlett.*

Dr. Aveling has urged that the fall of resistance in psychogalvanic experiments is not due to emotion but to conation. For, (1) emotion is subsequent to the experience given in introspection, (2) introspections of affection are seldom accompanied by deflection, (3) subjective estimates of 'alertness' or 'striving,' tally with the size of deflection. The present paper reports a series of experiments for testing these views. The general conclusion is that the mental state corresponding to deflections is not one of 'alertness'; it is a transitional state from one of 'unpreparedness' to one of 'preparedness.'

Deflection also occurs at the conclusion of the task (1) when there is relaxation and relief; (2) when doubt, anxiety fear, etc., intervenes; (3) when states such as those of admiration arise. The writer further suggests that the ultimate mental basis of the phenomenon may be a change from the non-voluntary to voluntary attention.

N. N. SENGUPTA

**The Journal of Applied Psychology. Vol. X, No. 2. June, 1926.**

*A revision and some results with Moore-Gilland aggressiveness Test.—A. R. Gilland.*

The author presents an elaborate revision of Moore-Gilland test of aggressiveness as one of the traits of personality. He dispenses with the old "electric shock" and "snake" tests and adds the following parts: (1) Eye-movement distraction test, (2) the starting test, (3) the hand-writing test, (4) the word-reaction test, and (5) the time reaction test. The tests were given to college students of both sexes. Various coefficients of correlation between different scores and tests have been discussed. It has been found from the result that aggressiveness plays an important role in success in many phases of modern business specially in salesmanship, and also in public speaking, if intelligence be taken into account. But it is admitted that this test involves many factors other than aggressiveness.

*The effect of size of the advertising section upon the value of individual advertisements.—Thomas C. Buchard and Carl J. Warden.*

The authors investigated the immediate recall value of an advertisement in sections of various sizes with a view to obtain a qualitative measure of the value of an advertisement when it appears among few or many others. The result

suggests that 'primary' and 'recency' can hardly be held responsible for the superior value attached to the first and last pages of the section over the intermediate positions. On the other hand the superiority of the position of advertisements depends mostly upon the fact that they are much more likely to be observed in the ordinary course of reading than are the more centrally located pages of advertising sections.

*A group point scale for the measurement of intelligence—  
Grace Arthur.*

This paper deals with the formula  $D V = \frac{Av_2 - Av_1}{\sigma_2 + \sigma_1} \text{ when } 2$

$D V$  represents discriminating values,  $Av_2$  represents average of the high age group,  $Av_1$  represents average low age group and  $\sigma_2$  and  $\sigma_1$  represent the standard deviation of the distribution of the higher and lower groups respectively. The revised group point scale was constructed by applying the discriminative value formula with the tests of (1) Trabue language completion, (2) Substitution, (3) Comprehension, (4) Opposites, (5) Word-building, and (6) Digits. A large number of subjects was taken for the experiment. The results, obtained with a scale constructed on the basis of this formula, are comparable with results obtained by the use of Binet scale.

*Sex difference in handwriting.—S. M. Newhall.*

After full discussion of Binet, Downey, Awramoff and Neumann's tests the author attempts to find how ordinary non-expert individuals can determine sex from handwriting. Two hundred specimens of handwritings were examined by a large number of subjects with the following result. The probability of estimation of sex from handwriting is of the order 0.60, which is not high enough for practical value. The

older the person the more correct is the judgment. The group test may give a more reliable value.

*Slang as an indication of character.—Gladys C. Schwesinger.*

The research here reported is an attempt in the field of character measurement with an aim to differentiate delinquents from non-delinquents. The method adopted by the author is similar to the questionnaire method. It consists of: (1) Definition of single words, (2) Definition of phrases, (3) Same-opposite, and (4) Classification of slang knowledge. Subjects taken for this experiment belonged to different nationality, religion and occupation.

*The measurement of persistence.—John J. Morgan and Hazel Lucolle Hull.*

The trait called persistence has been investigated by the authors as a keynote of success in human life, by the method of maze experiments. Persistence seems to be a trait that cannot be measured in the traditional manner.

Other important papers are:—THE PERCEPTIBILITY OF AUTOMOBILE LICENSE—James D. Weinland. A STUDY OF SOME COMMONLY USED PERFORMANCE TESTS:—Myrtle Raymaker Worthington. AN INFORMATION TEST APPLIED TO JUVENILE DELINQUENTS:—Evelyn Eastman. AN EXPERIMENT IN TESTING ENGINE LATHE:—Clyde W. Gleason. OLD AND NEW METHODS OF TEACHING PRIMARY READING:—Edith M. Peyton and James P. Porter. THE CLASSIFICATION OF MENTAL DEFICIENTS FOR A SPECIAL CLASS CENTRE—Nellie E. Powers.

S. SINHA

**REPORT OF THE INDIAN PSYCHOLOGICAL ASSOCIATION.**

The Annual Congress of the Indian Psychological Association was held at Calcutta on January 6, 1928, in the Laboratory of Experimental Psychology under the presidency of Lt. Col. Berkeley Hill. A resolution expressing the sense of irreparable loss to the cause of Psychology on account of Professor Titchener's demise, was moved from the chair and carried, all standing. The annual statement of accounts was discussed and passed. The suggestion of the President that the statements should be given in greater detail, in the future, was accepted. A lengthy discussion took place in connection with the proposal that the Association should undertake to arouse the interest of the general public and of the Government in regard to the problem of mental deficiency in India. The report of the Committee previously appointed by the Association for this purpose was considered. It was decided that the educational authorities of the local and the central government should be approached in order that the Association may be given proper facilities in its investigation of mental deficiency and allied questions. The suggestion that some of the special institutions and beggars' hostellaries should be chosen as fields of work, met with considerable support. It is hoped that the scheme would take a practical shape before long.

The meeting considered the report submitted by the Board of Editors to the Journal. The Association expressed its gratitude to the University of Calcutta for its generous help in printing the journal free of cost. It was resolved that other Universities in India should be approached for financial help for the publication of the journal. Several other questions in connection with the management of the journal, were discussed.

MEETING OF THE SECTION OF PSYCHOLOGY OF THE  
INDIAN SCIENCE CONGRESS AT CALCUTTA.

The section of Psychology of the Indian Science Congress met at the Asutosh Building in the first week of January, 1928, under the presidency of Dr. M. West. The following papers were read and discussed.

January 3.

- (1) A note on some recent studies of Attention,  
by Dr. N. N. Sengupta, Calcutta University.
- (2) The Concept of Instinct since 1920,  
by Dr. S. C. Mitra, Calcutta University.
- (3) Influence of attitude on the length of Reaction-Time,  
by Mr. Gopeswar Pal, Calcutta University.
- (4) Nature of Colour Experience of a partial colour-blind subject,  
by Mr. Gopeswar Pal, Calcutta University.
- (5) Mechanism of 'Bad' Memory,  
by Mr. Haripada Maity, Calcutta University.
- (6) Visual Perception of Complete Geometrical Figures,  
by Mr. M. L. Ganguli, Calcutta University.
- (7) Influence of sensory stimulus upon muscular work,  
by Mr. S. C. Sinha and Mr. M. S. Ghosh,  
Calcutta University.
- (8) Influence of modes of presentation on Memorisation,  
by Mr. S. K. Bose, Calcutta University.
- (9) Psycho-Galvanic Reflex as an aid to Crime Detection,  
by Dr. Gopalswami, Mysore University.

**January 4.**

- (1) The Sign Language of Deaf Mutes,  
by Mr. H. C. Banerjee, Dacca University.
- (2) Intelligence Tests in Bengal,  
by Mr. A. K. Dutt, and Dr. M. West, Dacca University.
- (3) Objective Examinations,  
by Mr. A. K. Dutt, Dacca University.
- (4) Relative Importance of Arithmetical Processes in Real life, by Mr. D. K. Chakravarty and Mr. J. C. Banerjee, Dacca University.
- (5) Symposium : The problem of mental deficiency in India, Speakers—Dr. N. N. Sengupta, Prof. G. C. Chatterjee, and Mr. A. K. Dutt.

**January 5.**

- (1) Two Dreams of an Ascetic Disciple,  
by Dr. S. L. Sarkar, Noakhali.
- (2) Psychological Anaesthesia,  
by Mr. Sankara Menon, Trivandrum.
- (3) The Problem of Hindoo-Moslem Unity from the psychological standpoint, by Mr. Haripada Maity,  
Calcutta University.
- (4) The Sense of Incomplete,  
by Mr. H. D. Bhattacharyya, Dacca University.
- (5) Introversion and Extroversion,  
by Mr. J. K. Sarkar, Muzaffarpur.
- (6) Symposium : The Relation of Psychiatry to Psychology, Speakers—Dr. G. S. Bose, Mr. H. D. Bhattacharyya and Lt.-Col. Berkeley Hill.

**January 6.**

- (1) Working of an unconscious motive in poetry, by Mr. R. Haldar, Patna.

- (2) Psychology of scouting, by Mr. D. N. Ghosh.
  - (3) Visual perception of Frms, by Mr. M. N. Samanta, Calcutta University.
  - (4) Estimation of distance by blindfold subject, by Mr. M. N. Banerjee, Calcutta University.
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# INDIAN JOURNAL OF PSYCHOLOGY

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## The Field of Race-Psychology

N. N. SENGUPTA.

It is a common belief that races differ from one another in their mental traits as much in their physical appearance and social customs. The cultural diversity is attributed in popular thought more often to mental differences than to other causes. Students of primitive life, like Tylor and Frazer, have attempted to explain animistic beliefs and customs in terms of certain types of thoughts peculiar to undeveloped races. Durkheim and Levy-Brühl, in the same manner have tried to define the nature of the processes characteristic of the primitive mind. The tendency has had its echo in the philosophic thought of the day. Thus, H. S. Chamberlain and his followers have enunciated a philosophy of race-romanticism upon the assumption of a superior psychic endowment of the nordic races. Among the psychologists, the theory of specific psychic gift of races and of the possibility of their mental gradation, has found a champion in no less a person than Professor MacDougall who seems to support the nordic theory. Side by side with these theories and speculations, a number of workers have been carrying on experimental investigations on the question of psychic difference of races for many years. The data of these studies form an important part of the current literature of psychology. The study of mental life of racial groups has, thus, reached a

stage when it can legitimately claim the special attention of psychologists. Time is ripe, therefore, for defining the field and methods of Race-Psychology.

The term 'Race' has been employed by psychologists largely in its physical connotation. It is a group the members of which possess a high degree of anatomical resemblance. The psychological investigation has, for this reason, been mainly confined to the primitive races whose racial heritage is unmistakable. It is on this assumption that comparison has been instituted between the 'full-blooded' and 'mixed' races, and between 'Blacks,' 'Browns' and 'Whites.' Race-Psychology therefore does not concern itself with the psychology of social and cultural groups in general, nor with political groups, unless they are identical with race-groups.

The first task of Race-Psychology is to ascertain the nature of the mental states which may be regarded as the common possession of the race. The mental state of the individual is discovered from introspective reports and inferred from behaviour. The same methods have been pursued in all popular disquisitions on racial mind. It is a common pastime of literary-minded travellers to write about the mentality of people with whom they come into contact. The writers rely solely upon the impressions which they gather from personal contact with a few individuals whom they regard as a fair sample of the race. Ideas and feelings of a selected number of persons and their behaviour interpreted in the light of the preconceived notions of the writer, serve as the basis of a theory of racial mentality. Such a method appears on the surface as a truly psychological procedure, in which the writer plays the part of the experimenter of psychological experiments. The generalisation, too, resembles a proper scientific induction. The drawback lies in the fact that the group of individuals studied is rarely a fair sample of the race. Further, the ideas and feelings which the people express, are very often dictated by a desire to 'pose' and to